

WHAT IS CLAIMED IS:

1. A shieldable needle assembly comprising:
 - a needle cannula having a proximal end and a distal end;
 - a hub mounted to the needle cannula at a location spaced from the distal end;
 - a shield axially slidable over the needle cannula between a fully retracted position and a fully extended position encapsulating the distal end of the needle cannula;
 - a first biasing member biasing the shield towards the fully extended position;
 - a lock for releasably maintaining the shield in the fully retracted position;
 - an actuator for releasing the lock; and
 - a retaining member engageable with the shield,wherein activation of the actuator causes the lock to be released with the retaining member preventing the shield from moving toward the fully extended position when engaged therewith, and wherein the shield is prevented from moving to the fully extended position until the retaining member is disengaged from the shield.
2. The apparatus of claim 1, wherein the actuator includes at least one actuating arm slidably mounted on the hub for releasing the lock.
3. The apparatus of claim 2, wherein one of the hub and the shield includes a latch, and wherein the other of the hub and the shield includes a detent for releasably engaging the latch, the latch and the detent forming the lock for releasably maintaining the shield in the fully retracted position, and wherein the actuating arm disengages the latch from the corresponding detent to release the lock.
4. The apparatus of claim 3, further comprising a housing projecting from the hub toward the distal end of the needle cannula and spaced outwardly from the needle cannula.

5. The apparatus of claim 3, wherein the shield includes a latch and wherein the housing includes a detent for releasably engaging the latch.

6. The apparatus of claim 3, wherein the retaining member includes a retaining arm slidably mounted on the hub, wherein the retaining member engages a retaining lug on the shield after the actuating arm has disengaged the latch from the detent.

7. The apparatus of claim 6, further including a second biasing member biasing the retaining arm away from engagement with the retaining lug.

8. The apparatus of claim 7, wherein the second biasing member is positioned such that the second biasing member is prevented from moving the retaining arm away from engagement with the retaining lug for a period of time following activation of the actuator.

9. The apparatus of claim 8, wherein said hub is adapted to mate with a needle holder, and wherein the actuator is activated by pressure applied through insertion of a sampling container within the needle holder.

10. The apparatus of claim 9, wherein the second biasing member biases the retaining arm away from engagement with the retaining lug upon withdrawal of the sampling container from the needle holder.

11. The apparatus of claim 10, wherein the first biasing member is a spring, wherein the spring has a spring force less than the force required to disengage the retaining arm away from engagement with the retaining lug.

12. The apparatus of claim 10, further including a second lock securing the shield in the fully extended position.

13. The apparatus of claim 1, wherein the retaining member includes a retaining arm slidably mounted on the hub, and wherein the retaining member engages the shield after the actuator has disengaged the lock.

14. The apparatus of claim 13, further including a second biasing member biasing the retaining arm away from engagement with the shield.

15. The apparatus of claim 14, wherein the second biasing member is positioned such that the second biasing member is prevented from moving the retaining arm away from engagement with the shield for a period of time following activation of the actuator.

16. The apparatus of claim 15, wherein the hub is adapted to mate with a needle holder, and wherein the actuator is activated by pressure applied through insertion of a sampling container within the needle holder.

17. The apparatus of claim 16, wherein the second biasing member biases the retaining arm away from engagement with the shield upon withdrawal of the sampling container from the needle holder.

18. The apparatus of claim 17, wherein the first biasing member is a spring, and wherein the spring has a spring force less than the force needed to disengage the retaining arm away from engagement with the shield.

19. A blood collection assembly comprising:
a needle cannula;
a hub mounted on the needle cannula;
a spring biased telescoping shield mounted on the hub and slidable between a fully retracted position and a fully extended position encapsulating a distal end of the needle

cannula;

a needle holder having a first end mated with the hub and a second end adapted for receiving a blood collection container; and

a retaining member moveably mounted on the hub and engageable with the telescoping shield when a blood collection container is received in the needle holder,

wherein the retaining member holds the telescoping shield from moving toward the fully extended position when engaged therewith, and wherein removal of the blood collection container from the needle holder causes the retaining member to disengage from the telescoping shield, thereby releasing the telescoping shield such that the telescoping shield will move toward the fully extended position.

20. The apparatus of claim 19, wherein the retaining member includes a retaining arm slidably mounted on the hub.

21. The apparatus of claim 19, further including a biasing member biasing the retaining arm away from engagement with the telescoping shield, wherein the biasing member is prevented from moving the retaining arm away from engagement with the telescoping shield until the blood collection container is removed from the needle holder.

22. A blood collection assembly comprising:

a needle cannula;

a hub mounted on the needle cannula;

a telescoping shield mounted on the hub and slidable between a fully retracted position and a fully extended position encapsulating a distal end of the needle cannula;

a spring mounted on the hub biasing the telescoping shield towards the fully extended position;

a lock on the hub holding the telescoping shield in the fully retracted position;

a needle holder having a first end mated with the hub and a second end adapted for receiving a blood collection tube;

an actuator moveably mounted on the hub for releasing the lock, wherein the

actuator is activated by insertion of a blood collection tube in the needle holder; and
a retaining member moveably mounted on the hub and engageable with the telescoping shield when a blood collection tube is positioned within the needle holder, wherein insertion of a blood collection tube in the needle holder activates the actuator to cause the lock to be released from the retaining member holding the shield against the spring bias, and wherein removal of the blood collection tube from the needle holder disengages the retaining member from the telescoping shield, releasing the spring bias and allowing the telescoping shield to be moved in a direction toward the fully extended position.

23. The apparatus of claim 22, wherein the retaining member includes a retaining arm slidably mounted on the hub, and wherein the retaining arm engages the telescoping shield after the actuator has disengaged the lock.

24. The apparatus of claim 23, further including a biasing member biasing the retaining arm away from engagement with the telescoping shield, wherein the biasing member is prevented from moving the retaining arm away from engagement with the telescoping shield until the blood collection tube is removed from the needle holder.

25. The apparatus of claim 22, wherein the actuator includes an actuating arm slidably mounted on the hub for releasing the lock.

26. The apparatus of claim 25, wherein one of the hub and the telescoping shield includes a latch, and wherein the other of the hub and the telescoping shield includes a detent for releasably engaging the latch, the latch and the detent forming the lock for releasably maintaining the telescoping shield in the fully retracted position, and wherein the actuating arm disengages the latch from the corresponding detent to release the lock.

27. A method of safety shielding a needle comprising:

providing a needle assembly comprising a hub mounted to a needle cannula with a spring biased telescoping shield mounted on the hub and a retaining member moveably mounted on the hub;

providing a needle holder having a first end for mating with a needle assembly and a second end adapted for receiving a blood collection tube;

mating the needle assembly with the needle holder;

inserting a blood collection tube into the needle holder, thereby engaging the retaining member with the telescoping shield and causing the retaining member to prevent the telescoping shield from being biased to a shielded position encompassing the needle cannula; and

removing the blood collection tube from the needle holder, thereby disengaging the retaining member from the telescoping shield and causing the telescoping shield to be biased toward the shielded position encompassing the needle cannula.

28. The method of claim 27, further comprising the steps of releasably locking the telescoping shield in a fully retracted position with a first lock prior to engagement of the retaining member with the telescoping shield, and releasing the first lock upon insertion of the blood collection tube.

29. The method of claim 28, wherein the releasing of the first lock utilizes at least one actuating arm slidably mounted on the hub for releasing the lock.

30. The method of claim 29, wherein the actuating arm extends within the needle holder for engagement with the blood collection tube.

31. The method of claim 30, wherein one of the hub and the telescoping shield includes a latch, and wherein the other of the hub and the telescoping shield includes a detent for releasably engaging the latch, the latch and the detent forming the first lock for releasably maintaining the telescoping shield in the fully retracted position, and wherein the actuating arm disengages the latch from the corresponding detent to release the lock.

32. The method of claim 27, further including the step of biasing the retaining member away from engagement with the telescoping shield.

33. The method of claim 32, further including the step of preventing the biasing of the retaining member from moving the retaining member arm away from engagement with the telescoping shield while the blood collection tube is in the needle holder.

34. The method of claim 27, further including the step of locking the telescoping shield in the shielded position encompassing the needle cannula.